

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-15. (Canceled).

16. (Currently Amended) A display device, comprising:

an optical waveguide, comprising at least one light guiding core, for receiving and guiding input light;

a first set of electrodes positioned on the optical waveguide;

a liquid crystal holographic optical element positioned on the first set of electrodes; and

a second set of electrodes positioned on the liquid crystal holographic optical element, wherein the at least first and second sets of electrodes define pixel areas of the display device and are adapted to selectively apply a voltage across one or more pixel areas of the liquid crystal holographic optical element;

wherein the liquid crystal holographic optical element ~~comprises at least one hologram that~~ is selectively adjustable, based on a voltage applied across the liquid crystal holographic optical element by the first and second sets of electrodes, between a first state, in

which a refractive index of the liquid crystal holographic optical element ~~is~~ and an angle of incidence of the input light are such that substantially all of the input light is reflected back to the optical waveguide via total internal reflection, and at least one other state, in which ~~the refractive index of at least one hologram is formed in the liquid holographic optical element is~~ such that a refractive index of the liquid crystal holographic optical element and an angle of incidence of the input light do not satisfy total internal reflection criteria, thereby causing at least some of the input light to ~~be transmitted through~~ enter and be diffracted by the liquid crystal holographic optical element.

17-18. (Canceled).

19. (Previously Presented) The device of claim 16, wherein the first and second sets of electrodes further define sub-pixel areas.

20. (Currently Amended) The device of claim 19, wherein the first and second ~~set~~ sets of electrodes are adapted to selectively apply a voltage across one or more sub-pixel areas of the liquid crystal holographic optical element.

21. (Previously Presented) The device of claim 20, wherein the sub-pixel areas comprise red, green and blue sub-pixel areas.

22. (Currently Amended) The device of claim 21, wherein, in the at least one other state, the liquid crystal holographic optical element comprises first, second and third holograms in each of the red, green and blue sub-pixel areas that are adapted to diffract red, green and blue light, respectively.

23. (Previously Presented) The device of claim 16, wherein the first state is achieved when no voltage is applied across the liquid crystal holographic optical element and the at least one other state is achieved by applying a voltage across the liquid crystal holographic optical element.

24. (Currently Amended) The device of claim 16, wherein the at least one other state comprises a state in which substantially all of the input light that impinges a selected area of the liquid crystal holographic optical element ~~is transmitted through~~ enters the selected area of the liquid crystal holographic optical element and is diffracted.

25. (Currently Amended) The device of claim 16, wherein a percentage of the input light that ~~is transmitted through~~ enters a selected area of the liquid crystal holographic optical element is continuously variable between substantially 0 and substantially 100% based on a magnitude of the voltage applied across the selected area of the liquid crystal holographic optical element.

26. (Previously Presented) The device of claim 16, further comprising a light source for generating the input light.

27. (Previously Presented) The device of claim 16, wherein the light guiding core has an area that is substantially the same as an effective display area of the display device.

28. (Previously Presented) The device of claim 16, wherein the optical waveguide comprises a plurality of light guiding cores.

29. (Canceled).

30. (Currently Amended) A display device, comprising:
at least one cladding layer;
a core layer on each cladding layer for receiving input light;
a first set of electrodes on the core layer;
a liquid crystal holographic optical element on the first set of electrodes;
a second set of electrodes on the liquid crystal holographic optical element,
wherein the first and second sets of electrodes define pixel areas of the display device and are adapted to selectively apply a voltage across one or more pixel areas of the liquid crystal holographic optical element;

wherein the liquid crystal holographic optical element ~~comprises at least one~~
~~hologram that~~ is selectively adjustable, based on a voltage applied across the liquid crystal
holographic optical element by the first and second sets of electrodes, between a first state, in
which a refractive index of the liquid holographic optical element ~~is~~ and an angle of incidence of
the input light are such that substantially all of the input light is reflected back to the core layer
via total internal reflection, and at least one other state, in which ~~the refractive index of~~ at least
one hologram is formed in the liquid holographic optical element ~~is~~ such that a refractive index
of the liquid crystal holographic optical element and an angle of incidence of the input light do
not satisfy total internal reflection criteria, thereby causing at least some of the input light is
~~transmitted through to enter and be diffracted by~~ the liquid crystal holographic optical element.

31. (Previously Presented) The device of claim 30, wherein an index of refraction of
the liquid crystal holographic optical element in the first state is substantially the same as an
index of refraction of the at least one cladding layer.

32-33. (Canceled).

34. (Previously Presented) The device of claim 30, wherein the first and second sets
of electrodes further define sub-pixel areas.

35. (Previously Presented) The device of claim 34, wherein the first and second sets of electrodes are adapted to selectively apply a voltage across one or more sub-pixel areas of the liquid crystal holographic optical element.

36. (Previously Presented) The device of claim 35, wherein the sub-pixel areas comprise red, green and blue sub-pixel areas.

37. (Currently Amended) The device of claim 36, wherein, in the at least one other state, the liquid crystal holographic optical element comprises first, second and third holograms in each of the red, green and blue sub-pixel areas that are adapted to diffract red, green and blue light, respectively.

38. (Previously Presented) The device of claim 30, wherein the first state is achieved when no voltage is applied across the liquid crystal holographic optical element, and the at least one other state is achieved by applying a voltage across the liquid crystal holographic optical element.

39. (Currently Amended) The device of claim 30, wherein the at least one other state comprises a state in which substantially all input light that impinges on a selected area of the

liquid crystal holographic optical element ~~is transmitted through~~ enters the selected area of the liquid crystal holographic optical element and is diffracted,

40. (Currently Amended) The device of claim 30, wherein a percentage of the input light that ~~is transmitted through~~ enters a selected area of the liquid crystal holographic optical element is continuously variable between substantially 0 and substantially 100% based on a magnitude of the voltage applied across the selected area of the liquid crystal holographic optical element.

41. (Previously Presented) The device of claim 30, further comprising a light source for generating the input light.

42. (Previously Presented) The device of claim 30, wherein the core layer has an area that is substantially the same as an effective display area of the display device.

43-44. (Canceled).